REMARKS

Claims **1, 5, 11, 22, 24,** and **25** are pending. By this amendment, claims **1, 24,** and **25** are amended for the Examiner's consideration. Applicants respectfully request reconsideration and timely withdrawal of the pending objections and rejections for the reasons discussed below.

The entry of this amendment is proper because no new issues are raised that need further search and/or consideration. For example, claim 1 is amended in accordance with the Examiner's comments to overcome an objection. Claims 24 and 25 are amended to recite that the troughs do not extend about an entire periphery of the shaft. This feature was already considered by the Examiner. Accordingly, the entry of the amendment is proper because the Examiner now raises issues which were not previously raised, and Applicants are responding thereto.

Objection to Claims

The objection to claims 1, 5, 7, 11, and 22 is moot in view of the above-described amendment made to claim 1, and should be withdrawn.

Claim 1 is amended to insert the phrase "at least one" immediately before the phrase "streamlined recessed portion," which appears in line 2 from the bottom of the claim. This amendment was made at the Examiner's suggestion to maintain consistent terminology. The amendment does not raise new issues, because the phrase "at least one streamlined recessed portion" was previously presented in line 4 from the top of claim 1.

35 U.S.C. § 103 Rejection

Claims **1, 5, 7, 11, 14**[1], **22, 24** and **25** are rejected under 35 U.S.C. § 103(a) over U. S. Patent No. 5,096,029 to Bauer, *et al.* ("Bauer") in view of U. S. Patent No. 4,064,910 to Weisenberger, *et al.* ("Weisenberger"). Applicants respectfully traverse this rejection for at least the following reasons.

In order to reject a claim under 35 U.S.C. §103(a), the MPEP mandates that three basic criteria must be met to provide a *prima facie* case of obviousness:

> First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The Examiner suggests that the combination of Bauer and Weisenberger discloses all the features of claim 1, which recites in pertinent part:

> at least one streamlined recess portion which opens the gas inlet and outlet formed on a side of the outer peripheral surface of the central portion of the gas opening/closing pin; and
>
> an integrally formed washer-shaped boss body portion formed at a lower end of the opening/closing pin,
>
> wherein the at least one streamlined recessed portion does not extend about the entire outer periphery of the central portion.

Claims 24 and 25 recite, in pertinent part:

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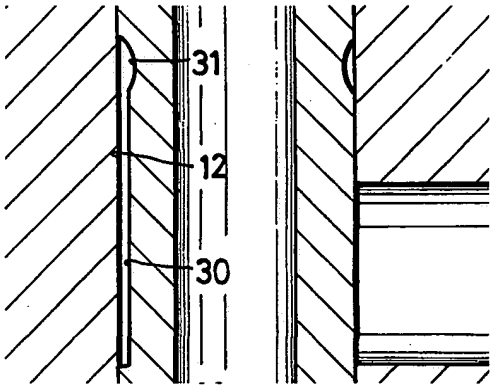
[1] This appears to be a mistake, as claim 14 was cancelled in a previous response.

> ... wherein the one or more inwardly continuously contoured troughs do not extend continuously about the entire outer periphery of the central portion ...

The Examiner admits that Bauer fails to disclose a streamlined recessed portion (or trough) that does not extend about the entire periphery of a central portion of a gas opening/closing pin, and relies on Weisenberger to supply this deficiency. Specifically, the Examiner argues that Weisenberger teaches a streamlined recess (30) on a pin member that does not extend around the entire periphery of the central portion, as claimed. The Examiner further concludes that given these teachings, it would have been obvious to one skilled in the art at the time the invention was made to have provided Bauer's pin with a mono-sided recess as taught by Weisenberger. The Examiner also suggests that a person of ordinary skill in the art would have been motivated to make this modification to provide a communication channel adjacent a gas outlet and to cut down on machining costs. Applicants respectfully disagree and offer the following in traversal of the Examiner's arguments.

References Must Be Considered As a Whole

The MPEP and case law require that the Examiner consider each reference as a whole, including any part(s) thereof. However, Applicants submit that the Examiner has not considered the references as a whole, but instead has impermissibly chosen only particular parts from the Weisenberger reference. For example, Figure 3 of the Weisenberger reference clearly shows that the recess 30 referenced by the Examiner does not exist in isolation, but rather includes (and terminates in) an annular groove 31. Contrary to the claimed invention, this annular groove extends around the entire circumference of the valve stem 18a. Illustratively, this is shown as:



Rather than applying the annular groove and its extension region 30 as a whole to the teachings of Bauer, the Examiner selectively separates the region 30 from its attached annular groove 31 and applies only the region 30 to Bauer's teachings. Applicants respectfully submit that such a application is not correct, because this reference explicitly teaches forming a recess that extends about the outer periphery of a cylindrical object such as a valve or a piston. In fact, selectively singling out only the recessed portion 30 runs contrary the express and inherent teachings of either Bauer or Weisenberger.

For these reasons, claims 1, 24, and 25 are allowable over Bauer or Weisenberger, whether alone or in combination. Claims 5, 7, 11, and 22 are also allowable based on their dependencies from allowable claim 1. Applicants thus respectfully request that the rejection of claims 1, 5, 7, 11, 22, and 24-25 be withdrawn.

Lack of Motivation to Combine

As further described below, the Examiner's suggested combination lacks support, either in the references themselves or in the knowledge available to a person of ordinary skill in the art

at the time the invention was made. Additionally, modification of Bauer to incorporate the features taught by Weisenberger would destroy the function of Bauer's invention and render it inoperable. Because a person skilled in the art at the time the invention was made would have recognized this, the Examiner's suggested combination makes sense only in hindsight, which is impermissible.

Referring to Figure 2 of Bauer for example, a piston 21 designed in the shape of a sleeve is shown. An annular conduit 51 formed in the receptacle 29, in the area of the transition between the piston rod 12 and the annular collar 40, is connected via an overflow opening 52 to the partial liquid chamber 19b. Radially opposite the overflow opening 52, a slit-like opening 53 is formed in the support and guide bush 39. In a front end 54 of the valve housing 33, a throttle opening 55 is associated with the slit-like opening 53 such that liquid can flow from the partial liquid chamber 19b via the conduit-like overflow opening 52, into the annular conduit 51, and then, on the diametrically opposite side, through the throttle opening 55 and the opening 53 into the overflow chamber 50.

In operation, the trigger pin 23 depresses into the piston rod 12, and the valve body moves downwards towards the partial liquid chamber 19a such that an annularly tapered section of the valve body moves into an area proximate the seal 41. Previously, a bottom portion of the valve body having a larger diameter than the annularly tapered portion had sealingly contacted each of the sealing beads 43, 44 so that fluid would not drain out of the bottom of the overflow chamber 50. However, when the valve body moves downward into the operating position, a gap appears between the sealing beads 43 and 44 and the small diameter, annularly tapered section 49. Consequently liquid flows out of the overflow chamber 50 along the inside of the seal 41 into

the opening 30, and from there into the partial liquid chamber 19a. In an alternate embodiment, the liquid may flow in the opposite direction (e.g., from the partial liquid chamber 19a into the overflow chamber 50).

Referring again to Figure 3 of Bauer, it is seen that Bauer requires the annular seals 36 and the sealing beads 43, 44 in order to operate properly. Replacing Bauer's valve stem with Weisenberger's valve stem would destroy the sealing effect of Bauer. For example, with the Weisenberger valve stem placed in the closed position shown in Figure 3, the annular groove 30 would be positioned in an area proximate Bauer's annular seal 36. Because the annular groove curves radially inwardly, such a positioning would create a gap between the annular groove and the annular seal 36. Because the Weisenberger annular groove connects to a flat portion, leaks would occur in the Bauer device as fluid from outlet 55 flowed in to the flattened portion, into the annular groove, and from there into the gap formed adjacent Bauer's annular seal 36.

Additionally, with the Weisenberger valve stem in the closed position shown in Bauer's Figure 3, the valve stem's flat portion would extend down into an area proximate the sealing beads 43, 44. Because the flattened portion has a smaller diameter than the rest of the valve stem, a gap would be formed between the flattened portion and the sealing beads 43 and 44. Consequently, leaks would occur in the Bauer device as fluid flowed from outlet 55 into the flattened portion, and from there into the gap formed between the sealing beads 43, 44 and the flattened portion.

Also referring again to Bauer's Figure 3, it is seen that the annularly-shaped overflow chamber 50 is crucial to the operation of the Bauer device. For example, when the valve stem is in the closed position as shown, the sealing beads 43 and 44 sealingly adjoined to the lower

diameter of the valve stem force fluid exiting from outlet 55 to flow into the overflow chamber, around the narrow diameter of the valve stem, and into the front end 54 of valve housing 33.

However, if Weisenberger's valve stem were substituted in the Bauer device, only one-half the overflow chamber 50 would be formed because the flattened portion of the Weisenberger valve stem does not annularly extend around the valve housing. This deficiency would not be cured by the annular groove because the groove, taught by Weisenberger, would be positioned a predetermined distance above the front end 54 of valve housing 33.

For these reasons, claims 1, 24, and 25 are allowable over Bauer or Weisenberger, whether alone or in combination. Claims 5, 7, 11, and 22 are also allowable based on their dependencies from allowable claim 1. Applicants thus respectfully request that the rejection of claims 1, 5, 7, 11, 22, and 24-25 be withdrawn.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to **Deposit Account No. 23-1951**.

Respectfully submitted,

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